

-- TEN (10) PAGES IN THIS FAX --

PATENT

Attorney Docket No. 56507

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
ENDERWICK ET AL.

Group Art Unit: 2167

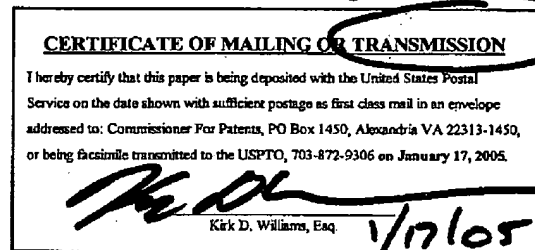
Application No. 10/616,737

Examiner: ROBINSON, GRETA LEE

Confirmation No. 2761

Filed: July 9, 2003

For: STORING AND SEARCHING A
HIERARCHY OF ITEMS OF PARTICULAR
USE WITH IP SECURITY POLICIES AND
SECURITY ASSOCIATIONS



Transmittal of PCT Search Report

Commissioner for Patents
Alexandria, VA 22313-1450

Dear Sir:

Enclosed herewith is a copy of a PCT search report for an application claiming priority to the present application. The Examiner in the present case prepared this PCT search report and all references cited in the PCT search report were also cited by the USPTO in the Office action mailed August 27, 2004, so copies of these references are not being submitted herewith.

This submission of this search should not be construed to be an admission that the information cited in the search report is, or is considered to be, material to patentability as defined in § 1.56(b). Additionally, the submission of this IDS is for the purpose of providing a complete record and is not a concession that the references are prior art to the invention claimed in the patent application. The right is expressly reserved to establish an invention date earlier than the above-

In re ENDERWICK ET AL.
Application No. 10/616,737

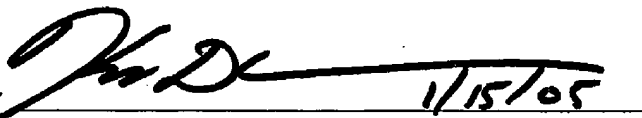
identified filing date in order to remove any cited reference as prior art should it be deemed appropriate to do so. Furthermore, the submission of this search report is not to be taken as a concession that any reference cited therein represents art that is relevant or analogous to the claimed invention. Accordingly, the right to argue that any reference is not properly within the scope of prior art relevant to an examination of the claims in the above-identified application is also expressly reserved.

Although no fees are believed due in regards to this communication, the Commissioner is hereby authorized to charge any associated fees to Deposit Account No. 501430. Moreover, the Commissioner is hereby generally authorized under 37 C.F.R. § 1.136(a)(3) to treat this communication or any future communication in this or any related application filed pursuant to 37 C.F.R. § 1.53 requiring an extension of time as incorporating a request therefore, and the Commissioner is hereby specifically authorized to charge Deposit Account No. 501430 for any fee that may be due in connection with such a request for an extension of time. Moreover, the Commissioner is hereby authorized to charge payment of any fee due any under 37 C.F.R. §§ 1.16 and § 1.17 associated with this communication or any future communication in this or any related application filed pursuant to 37 C.F.R. § 1.53 or credit any overpayment to Deposit Account No. 501430.

Respectfully submitted,
The Law Office of Kirk D. Williams

Date: January 17, 2005

By

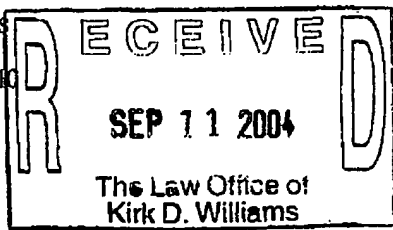

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PATENT COOPERATION TREATY

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From the INTERNATIONAL SEARCHING AUTHORITY

To:
KIRK D. WILLIAMS
1234 S. OGDEN ST.
DENVER, CO 80210



PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION
(PCT Rule 44.1)

Date of mailing (day/month/year)	
Applicant's or agent's file reference 56507-1	FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/US04/16475	International filing date (day/month/year) 26 May 2004 (26.05.2004)
Applicant CISCO TECHNOLOGY, INC.	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.
- Filing of amendments and statement under Article 19:**
The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):
- When?** The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.
- Where?** Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35
- For more detailed instructions, see the notes on the accompanying sheet.**
2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
- ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.
4. **Reminders**
- Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.
- The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.
- Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.
- In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.
- See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Greta L. Robinson <i>James R. Matthews</i> Telephone No. (703) 305-9600
--	---

Form PCT/ISA/220 (January 2004)

(See notes on accompanying sheet)

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
KIRK D. WILLIAMS
1234 S. OGDEN ST.
DENVER, CO 80210

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Date of mailing
(day/month/year)

03 SEP 2004

Applicant's or agent's file reference
56507-1

FOR FURTHER ACTION See paragraphs 1 and 4 below

International application No.
PCT/US04/16475

International filing date
(day/month/year) 26 May 2004 (26.05.2004)

Applicant
CISCO TECHNOLOGY, INC.

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.
- Filing of amendments and statement under Article 19:**
The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):
- When?** The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.
- Where?** Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35
- For more detailed instructions, see the notes on the accompanying sheet.
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- ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

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Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

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See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/ US
Mail Stop PCT. Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
Facsimile No. (703) 305-3230

Authorized officer

Greta L. Roberts
James R. Matthews
Telephone No. (703) 305-9600

Form PCT/ISA/220 (January 2004)

(See notes on accompanying sheet)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 56507-1	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US04/16475	International filing date (day/month/year) 26 May 2004 (26.05.2004)	(Earliest) Priority Date (day/month/year) 09 July 2003 (09.07.2003)
Applicant CISCO TECHNOLOGY, INC.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box No. II)

3. ☐ Unity of invention is lacking (See Box No. III)

4. With regard to the title,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the abstract,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No. 3B



as suggested by the applicant.



as selected by this Authority, because the applicant failed to suggest a figure.



as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

Form PCT/ISA/210 (first sheet) (January 2004)

INTERNATIONAL SEARCH REPORT

International application No.,

PCT/US04/16475

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : G06F 17/30 US CL : 707/3,5,100 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 707/3,5,9,100,200 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) WEST		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,567,812 B1 (GARRECHT et al) 20 May 2003 (20.05.2003), abstract, figure 7 and 9, column 10 lines 42-54, column 11 lines 49-60, column 13 line 19 through column 16 line 66	1-4, 8-16
A	US 6,038,560 (WICAL) 14 March 2000 (14.03.2000) see whole document	1-29
Y	US 6,470,332 B1 (WESCHLER) 22 October 2001 (22.06.2002), abstract, figure 3, column 8 lines 10 through column 9 line 14	1-4, 8-16
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents:		
"A"	document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed	
Date of the actual completion of the international search 15 August 2004 (15.08.2004)		Date of mailing of the international search report 03 SEP 2004
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703)305-3230		Authorized officer John E. Breenc <i>James R. Matthews</i> Telephone No. (703) 305-9600

Form PCT/ISA/210 (second sheet) (January 2004)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/16475

Box IV TEXT OF THE ABSTRACT (Continuation of Item 5 of the first sheet)

NEW ABSTRACT

Mechanisms for storing and searching a hierarchy of items are disclosed which may be particularly useful for implementing security policies (312, 314, 319) and security associations (311, 313, 318), such as, but not limited to Internet Protocol security (IPsec). A hierarchy of items is stored in a search priority order. Multiple element definitions and groups of elements are identified. Representations of element definitions and elements are in a prioritized searchable data structure (310) in decreasing search priority such that representations of each particular element definition is stored after representations of a set of particular elements associated with the particular element definition and before representations of lower priority element definitions and their associated elements. The element definitions may include Internet Protocol security policies (312, 314, 319) and the elements may include Internet Protocol security associations (311, 313, 318). The searchable data structure may include an associative memory or a plurality of associative memory entries.

Form PCT/ISA/210 (continuation of first sheet(3)) (January 2004)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
KIRK D. WILLIAMS
1234 S. OGDEN ST.
DENVER, CO 80210

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference 56507-1		Date of mailing (day/month/year) 03 SEP 2004
International application No. PCT/US04/16475		FOR FURTHER ACTION See paragraph 2 below
International filing date (day/month/year) 26 May 2004 (26.05.2004)	Priority date (day/month/year) 09 July 2003 (09.07.2003)	
International Patent Classification (IPC) or both national classification and IPC IPC(7): G06F 17/30 and US Cl.: 707/3,5,100		
Applicant CISCO TECHNOLOGY, INC.		

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703)305-3230	Authorized officer Greta L. Robinson <i>James R. Matthews</i> Telephone No. (703) 305-9600
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Form PCT/ISA/237 (cover sheet) (January 2004)

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US04/16475

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ in written format

☐ in computer readable form

c. time of filing/furnishing

☐ contained in international application as filed.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US04/16475

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>1-29</u>	YES
	Claims <u>NONE</u>	NO
Inventive step (IS)	Claims <u>5-7 and 17-29</u>	YES
	Claims <u>1-4 and 8-16</u>	NO
Industrial applicability (IA)	Claims <u>1-29</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and explanations:

Claims 1-4 and 8-16 lack an inventive step under PCT Article 33(3) as being obvious over Garrecht et al. US 6,567,812 B1 in view of Weschler US 6,470,332 B1.

Regarding claim 1, Garrecht et al. teaches a method for storing a hierarchy of items in a search priority order [note: abstract], the method comprising:

identifying a plurality of element definitions and a plurality of groups of elements [note: column 11 lines 7-60] and storing representations of the plurality of element definitions and elements of the plurality of groups of elements in a prioritized searchable data structure [note: store results 650 and create tree-shaped hierarchy 660 figure 7; column 13 line 20 through column 15 line 38; also column 17 lines 25-29].

Regarding claims 2-4, wherein the plurality of element definitions includes Internet protocol security policies ... wherein the searchable data structure includes an associative memory [note: Garrecht et al. column 19 lines 35-57].

The limitations of claims 8-16 parallel method claims 1-4; therefore they are rejected under the same rationale.

Although Garrecht et al. teaches the invention substantially as cited they do not explicitly teach decreasing search priority such that representations of each particular element definition of the plurality of element definitions is stored after representations of a set of particular elements of the plurality of groups of elements associated with said particular element definition and before representations of lower priority elements. Wechler allows a query string to be defined and used as a filter to retrieve results [note: abstract, figure 3 and 4, column 8 line 28 through column 10 line 3]. It would have been obvious to one of ordinary skill in the data processing art at the time of the invention to have combined Wechler with Garrecht et al. because the ability to filter results would give faster and more accurate search results.

Claims 5-7 and 17-29 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest adding a particular security association entry based on the received packet to said ordered associative memory entries, the particular security association entry corresponding to the particular Internet Protocol security policy, and the particular security association entry being added to said ordered associative memory entries prior to the particular associative memory entry location as cited in independent claims 5, 17, 23 and 26.

Claims 1-29 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.